



Academy

California Academy of Sciences' Member Newsletter

October & November 2002

\$1



The Planetarium Turns

50

Come Celebrate
Latino Heritage Month

Get Ready For
Run To The Far Side®

Message to Members
Remembering Dr. George Lindsay
1916–2002

Academy Executive Director
1963–1982



Dr. George Lindsay with Dr. Patrick Kociolek in October 2000.

During my many conversations with George Lindsay over the last five years, I began to understand the qualities he had that made him such a great director. He always had a vision, crisp, clear, and strongly held,

about what a natural history museum should be. It was a vision that appreciated and maintained a balance of research, collections, exhibitions, and education.

He believed research to be the foundation on which strong exhibitions and the education programs are built. It is a vision with which I strongly concur. A number of new, young curators were hired during his tenure, many of whom are still here some 25 years later. He re-established the Anthropology department. He worked to acquire more space for the collections, and his service ultimately helped to secure substantial funding for collections from the National Science Foundation. Today, the Academy is second only to Harvard in obtaining funds from that program.

During his tenure, an exhibition space for Anthropology, the Fish Roundabout and a diversity of new exhibitions were produced. He started the Academy's Education department, and with his wife, Gerry Lindsay, the Docent program commenced and was made strong.

George had the characteristic of being a strong leader. Many people have told us over the years, "You knew where you stood with George." He was "straight-forward" and "decisive." He was also fiercely loyal. He was loyal to his previous academic home, the San Diego Museum of Natural History, where he had served as director, and he was loyal to the Academy. Loyalty for George did not mean resisting change, but being sure the institution was on the right path, doing well in its balancing act, maintaining its values and mission.

In the eyes of this generation, and for many who will follow, George Lindsay will be remembered as one of the great directors of the California Academy of Sciences.

Patrick Kociolek
Executive Director

Celebrate Latino Heritage

Come join the Academy as we celebrate Latino Heritage with performances, activities and workshops. Full details below:

Latino Heritage Day – Enjoy a day-long celebration of Latino Heritage with ongoing demonstrations and hands-on activities including paper flowers, traditional *Zapotec* weaving, crafts from Colombia, traditional dances from Chile, and tortilla and tamale making. *Sunday October 20, 11 am to 4:30 pm* **F**

Havana Under the Stars – Join Orquesta La Moderna Tradición and feel the rhythm of traditional Cuban music—especially the lilting grooves of the *danzón*, a legendary ballroom style that developed from the synchronization of African and European influences. *Adult performance: Saturday, October 19, 6:30 pm reception, 7:30 pm Concert, \$6 members/\$8 non-members.* **D**

Children's performance: Sunday, October 20, 1 pm, Morrison Auditorium, FREE after admission. **F**

Calaveritas – Celebrate el Día de los Muertos at the Academy and take home your own *calaverita* (sugar skull), a modern version of a 3000 year old Aztec tradition to celebrate the Day of the Dead in México. First come, first served. Ages 7 and up. *Saturday, November 2 & Sunday, November 3, 12:30 to 2:30 pm* **F**

Argentine Folk Dance – See page 5. *Saturday, October 5, 1 pm* **F**

i For tickets to Havana Under the Stars call (415) 750-7141. Tickets are not needed for other Latino Heritage Month programs. Information/ Información en Español: (415) 750-7143.

11th Annual Halloween Party

The Academy invites you, your children, and grandchildren to our ghoulishly grand Halloween happening on Friday, October 25. Known for having 18 million 'scary things' in jars, the Academy is the perfect place to celebrate this nocturnal autumn holiday. From 6:30 to 9 pm, guests will enjoy the company of Academy scientists, great costumes, snacks, and beverages. Complimentary valet parking is provided. Thanks to Kathy Barish, Halloween Committee Chair. \$95 per adult; children free (must be accompanied by an adult). Space is limited, get your ticket soon (see page 14). Reservations held at the door. Benefits the early childhood program. Your support above \$75 per ticket is tax-deductible. For information, call (415) 750-7216.

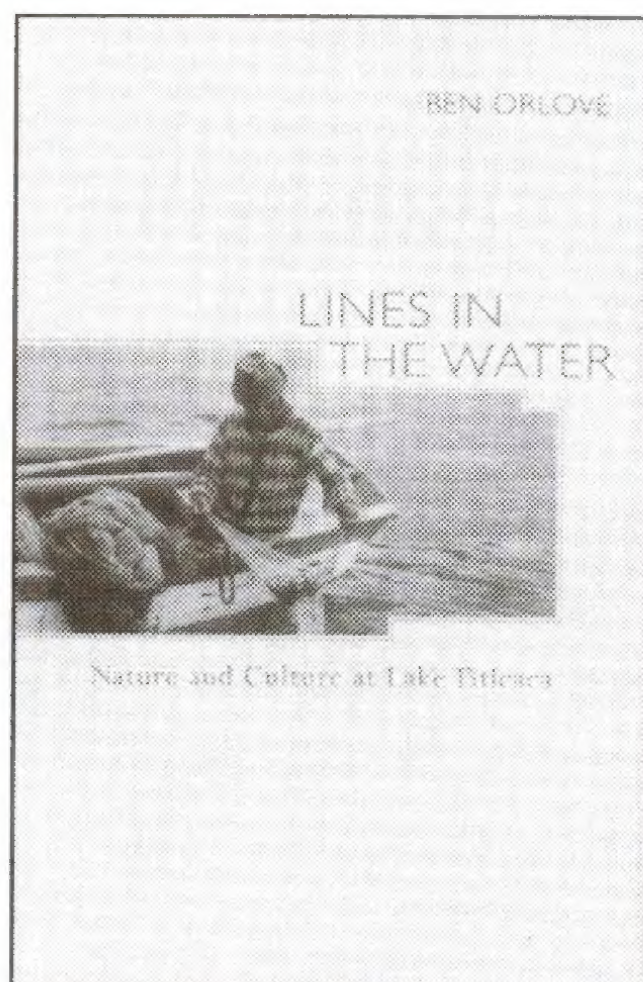


Goblins and Ghouls celebrate at the Academy's annual Halloween Party

PHOTO: DONG LIN

Lines in the Water: Nature and Culture at Lake Titicaca

Ben Orlove



Ben Orlove explains how the people of Lake Titicaca maintain their culture and fragile mountain environment in his book *Lines in the Water*.

High in the Peruvian Andes, the indigenous villagers who dwell on the shores of Lake Titicaca have formed a unique relationship between their traditional life and the modern world. Ben Orlove brings alive the fishermen, reed cutters, boat builders, and families of this isolated region, and describes the role that Lake Titicaca plays in their culture. He explores the landscapes and rhythms of life in the Andean highlands as he considers the intrusions of modern technology and economic demands in the region. Using an anthropologist's lens, Orlove tells the local version of events that

are taking place around the world, but with an unusual outcome: the indigenous people of Lake Titicaca have found ways to maintain their cultural autonomy and to protect their fragile mountain environment. *Wednesday, October 9, 2 & 7:30 pm. Free to members/\$8 non-members.* **F**

Upcoming Members' Event:

Members' Holiday Shopping Evening & Crafts Fair
Wednesday, December 11, 6 pm to 8:30 pm **F**

Neither God nor Devil: Rethinking our Perceptions of Wolves

Eva-Lena Rehnmark



Eva-Lena Rehnmark offers a new understanding of wolves.

Historically, wolves have occupied a range of personalities and roles in mythologies around the world. From a symbol of evil depicted by the Christian church in order to teach morals, to a god of fertility for crops in Japan and the Americas, the wolf has at the same time inspired fear and adulation. Join Eva-Lena Rehnmark as she argues that neither deification nor demonization of the wolf is fair and that a new clear-eyed relationship

with these fascinating animals must be forged. Her lecture and book are informed by scholarly research and observation as well as beautiful illustrations, as she examines their role in literature, mythology, and art. *Wednesday, November 13, 2 & 7:30 pm. Free to members/\$8 non-members.* **F**

i Tickets may be purchased at the door, by using the form on page 14 or calling (415) 750-7128.

Attention Members

For updated information about reciprocal admission to other museums call (415) 750-7111 or go to www.calacademy.org/membership

Volunteer Profile:

Making Comets, Docent-Style

What do you get when you mix dry ice, sand, dirt, corn syrup, ammonia, and water? A "dirty snowball" or "streaming hair"—otherwise known as a comet. The chefs who create these model comets are Jean Johnson and Joan Florence, docents at the Academy of Sciences. They bring their "comet sure fire show-stopper"—a short presentation on the making of comets—to Cowell Hall most Tuesday mornings to the delight of visitors, young and old.

"The kids love it, the ingredients are understandable, and I get to talk about chemistry in a very simple way," said Johnson.

"It's a real challenge because the recipe doesn't work out the same each time, but the kids enjoy the mess, the vapors, the whole drama—it's a little like doing improv," said Florence, adding that before she joined the docent program eleven years ago she had a hard time even talking to strangers.

On a recent Tuesday morning, the audiences for this 15-minute presentations sat or stood in rapt attention with hardly a muscle moving. One mother said "I haven't seen my four-year old sit that still for a very long time."

"It's more show and less talk," said Johnson, who has also led scheduled tours of the Academy for the last eight years. "This gives us an opportunity to reach groups who come to the Academy without reserving a tour. Who can resist the opening line 'Do you want to see how a comet is made?'"



PHOTO: DONG LIN

Joan Florence and Jean Johnson bring a sure fire show-stopper each week to Cowell Hall.

—Rosalind Henning, rhenning@calacademy.org

i The next docent training begins in October. Call (415) 750-7154 for further information or to sign-up.

F / **F** = Free to all / Free to members

www.calacademy.org

D = Discounted for members

African Ceremonies: Documenting a Vanishing World

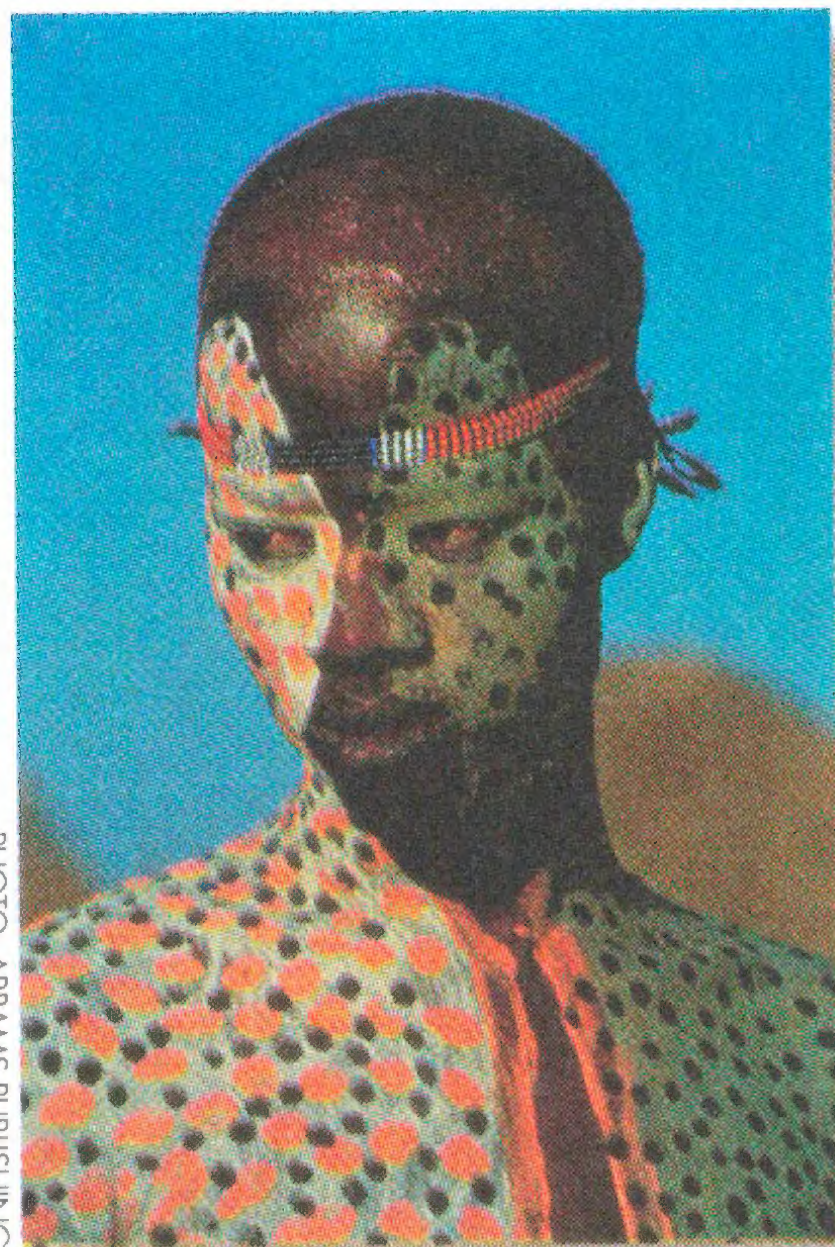


PHOTO: ABRAMS PUBLISHING

An example of Beckwith and Fisher's work: A Karo dancer in Ethiopia.

When they first met in 1978 at a Massai warrior ceremony in East Africa, **Carol Beckwith** and **Angela Fisher** were both working on individual projects documenting the lives and traditions of the peoples of Africa. "It only took us a week to decide to collaborate," Beckwith told *Time* in a 1996 interview. The synergy that marked their friendship and professional work enabled them to spend over twenty years, off and on, in the field. The photographers often lived with their subjects for extended periods of time to build the trust that was necessary to gain access to the more exclusive rites. Beckwith, again speaking with *Time* said, "We never take photographs until we make strong contact with the people. The best photographs came on the second or third visit, when you feel like one of them."

In 1999, Beckwith and Fisher released their masterwork — a massive two-volume tome, *African Ceremonies* — a celebration in photographs and text of the continent's rapidly disappearing tribal rites and rituals. They chose to focus their efforts on ceremonies because they "are the peak moments in the life of Africa, where you actually see everybody wearing the most incredible paraphernalia and adornments, and you understand their emotions and feelings," Fisher said in a 1999 interview with the *New York Times*. Whether they are documenting male and female initiation rites or the charming and seductive Wodaabe courtship dances, Beckwith and Fisher convey the reverence with which the participants carry out their ceremonies. *Wednesday, October 23, 7:30 pm. \$6 members/\$8 non-members. Booksigning to follow.* ①

—Kevin Welch, lectures@calacademy.org

Birds and the Undiscovered World



PHOTO: RICK AND NORA BOWERS

Kenn Kaufman, the avid birder.

Though the current information explosion might lead us to believe there is little left to discover, the ever-changing world of birds provides ample evidence to the contrary. **Kenn Kaufman**, a noted birder, brings a unique blend of technical knowledge and compassion for teaching others about the wonders of bird watching. *Thursday, October 3, 7:30 pm. \$6 members/\$8 non-members. Booksigning to follow.* ①

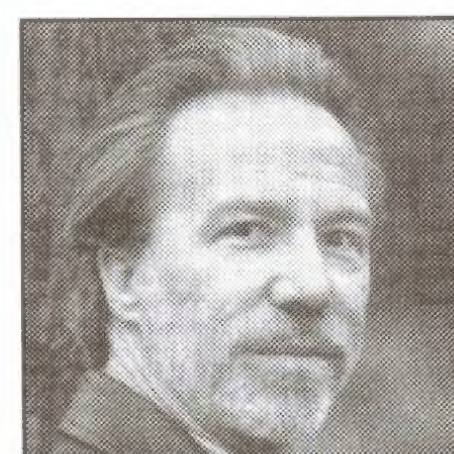
The Lost Dinosaurs of Egypt

In 1911, Dr. Ernest Stromer led an expedition to Egypt's Bahariya Oasis in the Sahara and discovered four new species of dinosaurs. Tragically, a 1944 Allied bombing raid incinerated all of his work, leaving much of it unknown until **Josh Smith** and a team from the University of Pennsylvania returned to Egypt in 1999 to retrace his steps. Join Smith as he recounts this fascinating tale and describes his finds in the deserts of Egypt, including a huge new dinosaur species. *Wednesday, October 16, 7:30 pm. \$6 members/\$8 non-members. Booksigning to follow.* ①

Search For the Golden Moon Bear

Join **Sy Montgomery** as she tells of wandering through the land-mined forests of Southeast Asia where she encountered remote hill tribes, towering forests, crumbling temples, monks, poachers, and scholars. Learn about astonishing new opportunities for conserving endangered species in this fragile region. *Thursday, November 7, 7:30 pm. \$6 members/\$8 non-members. Booksigning to follow.* ①

The Killers Within: The Deadly Rise of Drug-Resistant Bacteria



Mark Plotkin is one of the world's most renowned ethnobotanists. In 1998, *Time* declared him a "Hero for the Planet."

Join **Mark Plotkin**, a renowned ethnobotanist, as he delves into the secret lives of bacteria and describes how they have aggressively evolved and outwitted doctors in a medical crisis that has been brewing for decades. Learn about the scientists involved in the race to develop new means to combat bacteria. *Wednesday, November 20, 7:30 pm. \$6 members/\$8 non-members. Booksigning to follow.* ①

Latina Women Take on a Men's Dance

Women performing the dances of the *gauchos*, Argentina's fiercely independent cowboys? In years past, such a thing would have been unheard of, says Patricia Jensen, General Director of Tango A Media Luz. These dances were once the province of men only. But the Estrellas, three women skilled in Argentine folkloric dance, were determined to cross the gender barrier. They found a teacher in Pampa Cortés, a champion dancer for more than four decades, who has worked with the Estrellas for six years, honing their skills in the *malambos de boleadoras*.

The name of this dance derives from the weapon it features. The boleadoras is an indigenous weapon used in hunting and warfare. A typical set consists of three spherical weights attached together with thongs. The boleadoras were flung at one's target, entangling its legs or neck. Men also perform malambos with other weapons: knives, whips, and lances. Among male dancers the competition is primary: they dance faster and harder, leap higher, shout louder. While the Estrellas lack the men's sheer physical strength, their performances emphasize grace and rhythm and highlight footwork and the boleadoras. *This is a special program in honor of Latino Heritage Month.*

Tango A Media Luz and the Estrellas perform malambos de boleadoras and other Argentine folkloric dances on Saturday, October 5, at 1 pm in Morrison Auditorium. (F)



PHOTO: MARTY SOHL

Tango A Media Luz and the Estrellas perform the dances of Argentine Gauchos (cowboys) with a distinctly feminine flair.

—Dr. Jennifer Michael, jmichael@calacademy.org

Songs of the Seafaring Life

Sea chanteys (chanties or shanties) are songs traditionally sung by sailors to accompany and set the rhythm for heavy, repetitive work on board ship. Sailors also sang maritime ballads and forecastle songs that paint portraits of life at sea and on shore. The Welsh musicians of Mainbrace—Mike O'Leary-Johns and Tony Fraser—offer a glimpse into this musical tradition. *Saturday, October 12, 1 pm (F)*

Kites: Traditional and Contemporary

Tom McAlister of Highline Kites in Berkeley discusses the history and culture of kites in various traditions, while highlighting contemporary American kite-makers. This presentation will include slides as well as examples of various kinds of kites. *Saturday, October 26, 11 am. (F)*

Hip-Hop Dance

Hip-hop dancing is an urban art form that started in the Bronx during the late 1960's. Its popularity among inner-city youth spread throughout the early and mid-1980's, then increased dramatically in the 1990's. Hip-hop's most common form is *b-boying*, or *breaking*, which is characterized by a combination of elaborate footwork and spinning moves that often resemble acrobatics. The name came about because these dances were initially performed during breaks in the music. In this presentation, the young dancers of Dance-A-Vision will perform various styles of hip-hop dancing. *Saturday, November 9, 1 pm. (F)*

Songs from English Tradition

Singer and songwriter Richard Grainger, here on tour from England, performs songs from his wide repertoire of traditional music. Richard was born into a steel-working family on England's northeast coast. Both his traditional repertoire and original compositions reflect a passion for his roots—the contrasting worlds of industrial Teesside and the windswept English coast. *Saturday, November 16, 1 pm. (F)*

Native American Artifacts

Fred Wahpepah is a Native American of Kickapoo, Sac and Fox, and Irish descent. He brings a series of traditional artifacts to share, including beaded moccasins, a buffalo skull, fans of eagle and red-tail hawk feathers, and a dance shawl. He will discuss the role of these objects in Native American culture and ritual. *This is a special program in honor of Native American Heritage Month. Saturday, November 23, 1 pm. (F)*

i Presentations are free; no reservations are needed. For further information contact Dr. Jennifer Michael at (415) 750-7165, or visit www.calacademy.org. The Traditional Arts Program is funded by the Paul L. and Phyllis Wattis Foundation.

Weaving a History of Navajo Rugs

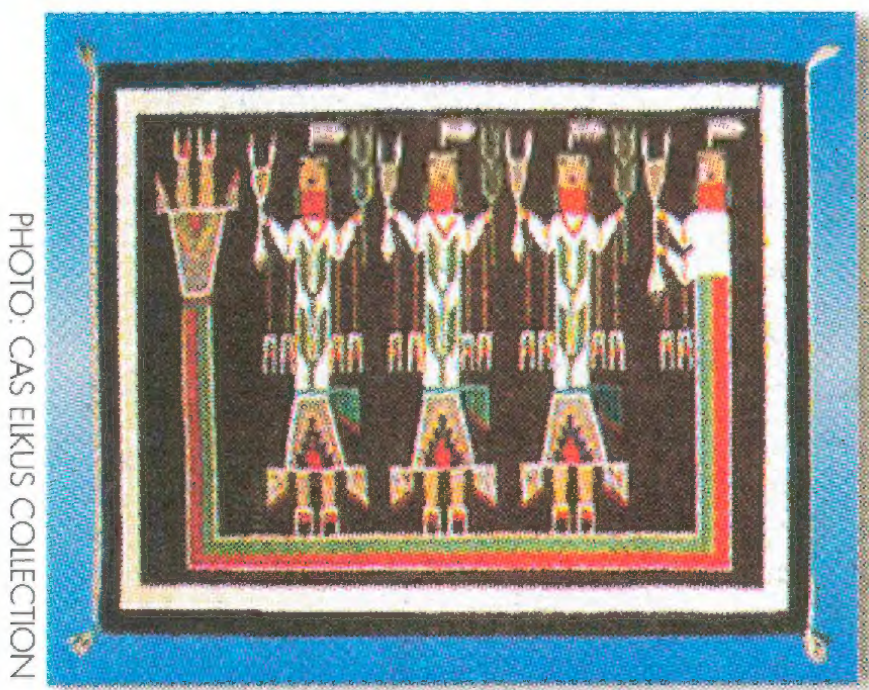


PHOTO: CAS EIKUS COLLECTION

This yei-style Navajo rug, ca. 1950's, represents an age gone by when rug patterns indicated the trading post where they were woven.

As the former director and curator of the Navajo Nation Museum in Arizona, Academy scientist Russ Hartman holds a special place in his heart—and on his walls—for Navajo rugs. These rugs, with their many names and patterns, represent a traditional art form that developed after the Navajo Reservation was created in 1868 in the Southwest. Once trading posts brought pre-made clothing to the Reservation, Navajo women no longer needed to weave shoulder blankets for their families, so they began to apply their weaving skills to thicker, sturdier rugs.

By the early 1880s, trading posts within the Reservation were beginning to export these finely made rugs across the United States. As each post became known for a particular style of weaving, the rugs took on the names of the trading posts that sold them, such as Ganado, Two Grey Hills, and Wide Ruins. “There were no paved roads on the Reservation until the 1950s,” explains Hartman. “So, people in different areas didn’t have much contact with one another. As a result, each region’s weavers developed distinct patterns that characterized their rugs.”

In today’s world of multimedia communication and rapid transportation, Navajo weavers often learn to weave five or six different styles of rugs. Although the styles are no longer tied to geographic locations, they still bear the names of the trading posts around which they were originally created. On Monday, November 18, Hartman will offer a slide-illustrated journey through these trading posts, along with a presentation of Navajo rugs from the Academy’s collection. Participants are invited to bring their own rugs to the class for identification. *This class is being offered as part of Native American Heritage Month.*

Adult Seminar — Monday, November 18, 7-9 pm, \$20 members/\$25 non-members ①

—Stephanie Greenman

Native American Uses of California Plants: Fall Harvest

Rediscover plants that were used for centuries as food, medicine, and raw materials. Identify different acorns, taste roasted bay nuts, learn beneficial uses for stinging nettles, and more. Instructed by naturalist Kurt Rademacher. *Adult Seminar and Field Trip—Tuesday, October 15, 7-9 pm & Saturday, October 19, 10 am-3 pm \$40 members/\$45 non-members* ①

Leave the Field Guides at Home

Who wants to be weighted down by cumbersome guidebooks on long hikes? Learn how to use a field journal to record questions and observations and how to use field guides—after hiking—as a tool for identification. Instructed by naturalist and illustrator Diane T Sands. *Adult Workshop and Field Trip—Saturday, October 26, 9 am-4 pm \$25 members/\$30 non-members* ①

Brooks Island Cruise and Exploration

Take a cruise aboard the *Delphinus* to explore this East Bay park, accessible by permit only. Learn about the island’s plants, birds, and natural and cultural history on a hike to the top for a panoramic view. Instructed by naturalist Ronn Patterson. *Adult Field Trip—Sunday, October 27, 9 am-4 pm \$75 members/\$85 non-members* ①

Discovering the Form and Beauty of Skulls

The form and beauty of skulls have fascinated artists for centuries. Explore their architecture and function as you

sketch in the Academy’s acclaimed **skulls** exhibit, and then discover how to paint with sepia-toned inks on vellum using the sketches as references. Instructed by artist Carolynne Griffin. *Adult Workshop—Saturday & Sunday, November 2 & 3, 9 am-3 pm \$100 members/\$110 non-members (materials not included; supply list sent with confirmation.)* ①

Powers of Ten and the Human Population Explosion

Discover how habitat destruction, the extinction of species, and the loss of indigenous cultures have paralleled the exponential growth of the human population and what can be done to reverse the trend. Instructed by photographer and physician Phil Rasori. *Adult Seminar—Tuesday, November 19, 7-9 pm \$20 members/\$25 non-members* ①

Beginning Birding: Fall Birds of Golden Gate Park

Learn some basic birding tips, and then head out to Strybing Arboretum and Botanical Gardens to look for gold-crowned sparrows, acorn and hairy woodpeckers, and ring-necked and bufflehead ducks. Instructed by birder Nancy DeStefanis. *Seminar and Field Trip for Families with Children Ages 7 and up—Saturday, November 16, 9 am-noon \$25 adults/\$20 children, members; \$30 adults/\$25 children, non-members* ①



For registration information and more details, including other course offerings, call (415) 750-7100 or visit www.calacademy.org/education.

Fun With Dead Heads

Cats and Dogs – Explore the design, function, and adaptations of feline and canid (dog) skulls. All Ages. *Wednesday, October 2, 11:30 am and 1:30 pm* **F**

Brain Case Drop – The first skulls were designed by nature almost 500 million years ago to protect the brain. Now you can build your own protective brain case, using an egg to represent a brain. As a test, we'll drop your case from the Academy's roof. Will your brain survive? Ages 7 and up. Space is limited; first come, first served. *Saturday, October 5, Brain Case Construction 11 am–1 pm, Drop 1:30 pm, Courtyard* **F**

Make a Skull – Examine real skulls and then make a simple machine skull model of your own. All ages. *Saturday, October 5; Sunday, October 6; Monday, October 14; Saturday, October 19; Sunday, October 20; Sunday, October 27; Saturday, November 16; Sunday, November 17; Saturday, November 23; Sunday, November 24; all days: 12:30 pm to 3:30 pm* **F**

How Do They Do That? – How do animals locate prey without seeing it or hearing it? Or swallow prey bigger than their heads? Explore animal senses by looking at skulls. All ages. *Friday, October 11; Friday, October 25; Friday, November 1; Friday, November 29; all days: 11:30 am and 1:30 pm* **F**

Mysterious Victims of Flying Predators – Examine the hunting technique of hawks, eagles and other flying predators, then reconstruct the scene of the crime as we identify the skulls of their prey. All ages. *Saturday, October 12; Saturday, October 26; Saturday, November 9; Saturday, November 30; all days: 11:30 am and 1:30 pm* **F**

Skull Halloween Tour – After dark sets in...grab a flashlight and come to tour Skulls. Learn about some of the 1700 skulls on display from Ray "Bones" Bandar. *Wednesday, October 30, 7 to 8:20 pm, \$2 members/\$5 non-members. Ages 9 and up. Space is limited. For reservations call (415) 750-7348* **F**

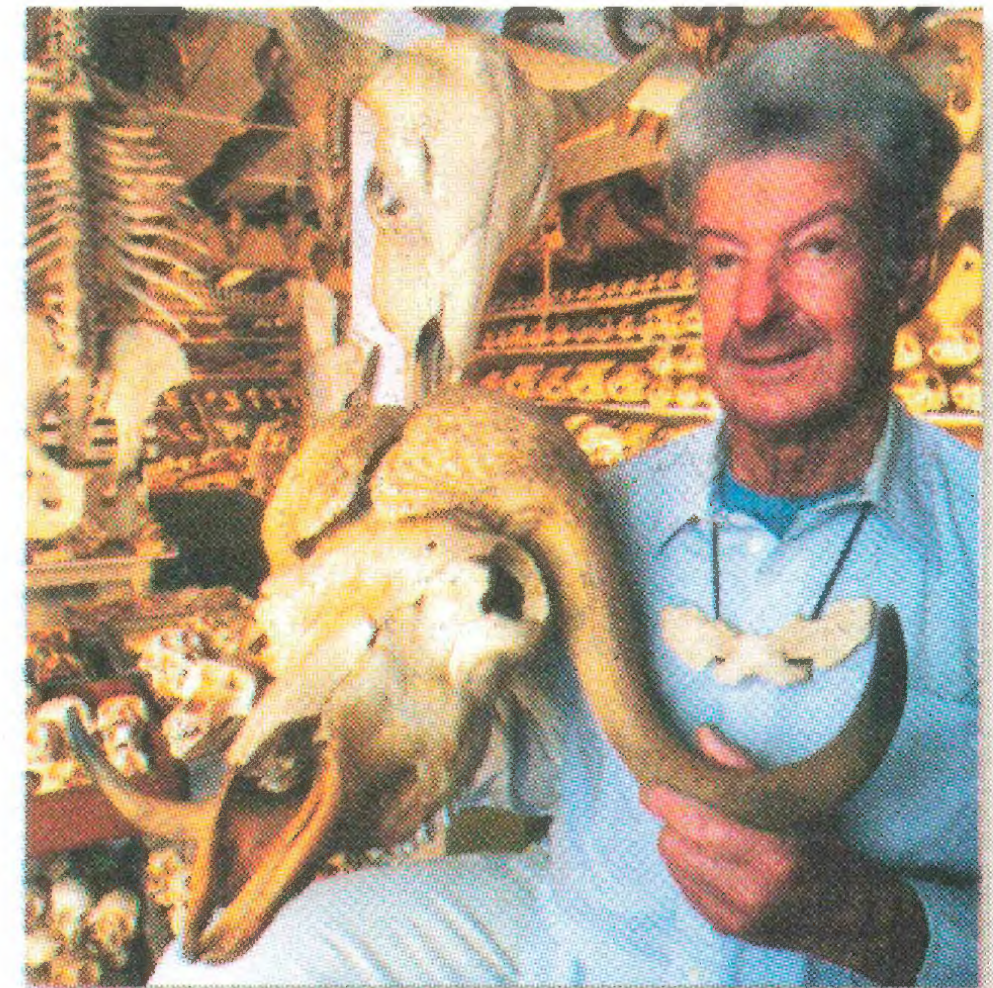


PHOTO: DONG LIN

Ray Bandar, Academy Field Associate, will lead visitors on a flashlight tour of skulls.

Bare Bones – Take a crash course on recognizing animals by their skulls alone, learning important details used by experts to compare species. All ages. *Thursdays in October: Sunday, November 10; Sunday, November 17; Sunday, December 1; all days: 11:30 am and 1:30 pm* **F**

Bird Skulls – Meet a live toucan, touch real bird skulls and explore avian skulls. All ages. *Sunday, October 13; Tuesdays in November; all days: 11:30 am and 1:30 pm* **F**

i All programs are free and take place in the skulls exhibit, unless otherwise noted. For more information call (415) 750-7143.

skulls

Trading Cards Are Here!

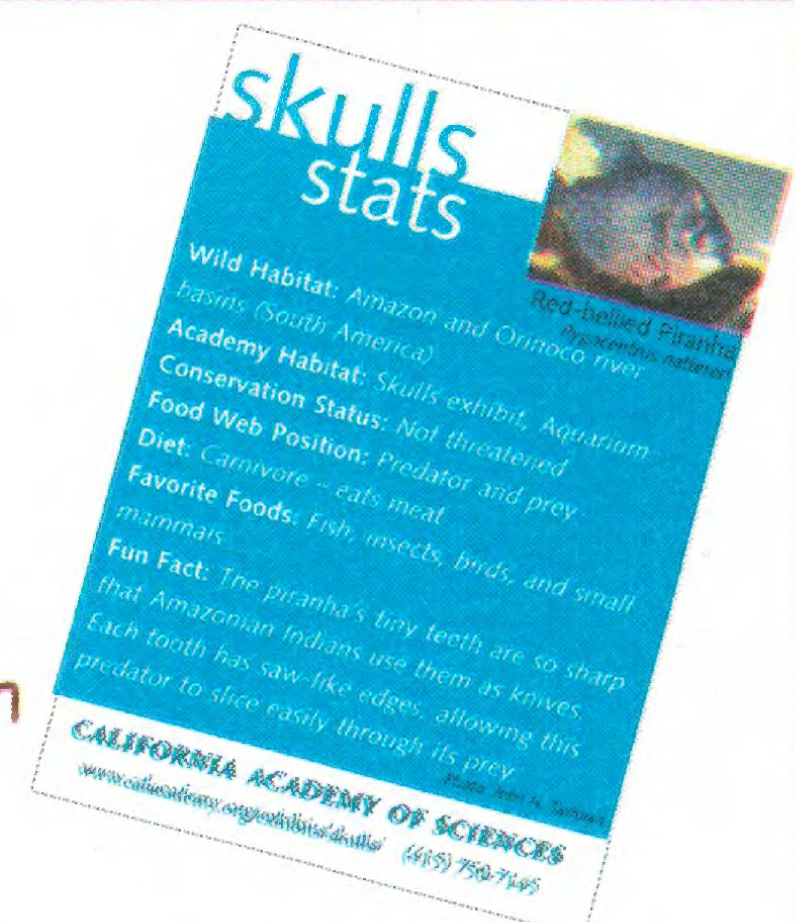
Receive your first free card just for visiting the Academy in 2002.



Complete a fun scavenger hunt to learn and earn four more free cards through October 31st.

A second scavenger hunt in November and December will help you track down the last four cards.

Collect all 9 Cards!



Both packs of cards are also available for purchase in the Academy stores. Hurry in while supplies last.

October 2002 at the Academy

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1 1890 Yosemite National Park established	2 FP Cats and Dogs 11:30 am & 1:30 pm p7	3 FP Bare Bones 11:30 am & 1:30 pm p7 L Birds and the Undiscovered World 7:30 pm p4	4	5 Story Time 10:30 am FP Brain Case Drop 11 am–1:30 pm p7 FP Make a Skull 12:30–3:30 pm p7 FP Estrellas 1 pm p7
6 FP Make a Skull 12:30–3:30 pm p7	7	8	9 L Lines in the Water 2 & 7:30 pm p3	10 FP Bare Bones 11:30 am & 1:30 pm p7	11 FP How Do They Do That? 11:30 am & 1:30 pm p7	12 Story Time 10:30 am FP Songs of the Seafaring Life 1 pm p5 FP Victims of Flying Predators 11:30 am and 1:30 pm p7
13 FP Bird Skulls 11:30 am & 1:30 pm p7	14 FP Make a Skull 12:30–3:30 pm p7	15 AC Native American Uses of California Plants: Fall Harvest Seminar for Field Trip 7–9 pm p6	16 L The Lost Dinosaurs of Egypt 7:30 pm p4	17 FP Bare Bones 11:30 am & 1:30 pm p7 1989 Loma Prieta Earthquake	18	19 Story Time 10:30 am SP Havana Under the Stars Adult's Concert 7:30 pm p2 FP Make a Skull 12:30–3:30 pm p7
20 FP Latino Heritage Day 11 am–4:30 pm p2 FP Make a Skull 12:30–3:30 pm p7 FP Havana Under the Stars – Children's Concert 1 pm p2	21	22 L Planets and Satellites in Our Solar System 7:30–9pm p11	23 L African Ceremonies 7:30 pm p4	24 FP Bare Bones 11:30 am & 1:30 pm p7	25 FP How Do They Do That? 11:30 am & 1:30 pm p7 SP Halloween Party 6:30–9 pm p2	26 Story Time 10:30 am FP Kites 11 am p5 FP Victims of Flying Predators 11:30 am & 1:30 pm p7 AC Leave the Field Guide 9 am–4 pm p6
27 FP Make a Skull 12:30–3:30 pm p7 AC Brooks Island 9 am–4 pm p6	28	29	30 FP Skull Halloween Tour 7-10 pm p7	31 FP Bare Bones 11:30 am & 1:30 pm p7		

L = Lecture (415) 750-7096
 PE = Planetarium Event (415) 750-7127
 FP = Free Family Program (415) 750-7145
 FC = Family Class (415) 750-7100
 AC = Adult Class (415) 750-7100
 SP = Special Program (415) 750-7145

November 2002 at the Academy

Tell your friends and neighbors about the
4th Annual Neighborhood Free Days.
Residents from San Francisco neighborhoods are invited
to visit the Academy FREE during one weekend in October and
November. Find the neighborhood schedule at
www.calacademy.org.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<p>Tell your friends and neighbors about the 4th Annual Neighborhood Free Days. Residents from San Francisco neighborhoods are invited to visit the Academy FREE during one weekend in October and November. Find the neighborhood schedule at www.calacademy.org.</p>						
3 <ul style="list-style-type: none">Calaveritas 12:30–2:30 pm p7Discovering the Form and Beauty of Skulls 9 am–3 pm p6	4	5 <ul style="list-style-type: none">Bird Skulls 11:30 am & 1:30 pm p7	6	7 <ul style="list-style-type: none">Search For the Golden Moon Bear 7:30 pm p4	8	9 <ul style="list-style-type: none">Hip-Hop 1 pm p6Planetarium's 50th 11 am–5 pm p11Victims of Flying Predators 11:30 am & 1:30 pm p7
10 <ul style="list-style-type: none">Bare Bones 11:30 am & 1:30 pm p7	11	12 <ul style="list-style-type: none">Bird Skulls 11:30 am & 1:30 pm p7A Heretic's Approach to Solar System Formation 7:30–9 pm p11	13 <ul style="list-style-type: none">Rethinking our Perceptions of Wolves 2 & 7:30 pm p3	14	15	16 <ul style="list-style-type: none">Songs from English Tradition 1 pm p5Make a Skull 12:30–3:30 pm p7Birding 9–noon p6
17 <ul style="list-style-type: none">Make a Skull 12:30–3:30 pm p7Bare Bones 11:30 am & 1:30 pm p7	18 <ul style="list-style-type: none">Navajo Rugs 7–9 pm p12	19 <ul style="list-style-type: none">Bird Skulls 11:30 am & 1:30 pm p7Powers of Ten and the Human Population Explosion 7–9 pm p6	20 <ul style="list-style-type: none">The Deadly Rise of Drug-Resistant Bacteria 7:30 pm p4	21	22 <ul style="list-style-type: none">Deadline to pre-register for Run To The Far Side® p12	23 <ul style="list-style-type: none">Native American Artifacts 1 pm p5Make a Skull 12:30–3:30 pm p7
24 <ul style="list-style-type: none">Make a Skull 12:30–3:30 pm p7	25	26 <ul style="list-style-type: none">Bird Skulls 11:30 am & 1:30 pm p7	27	28	29 <ul style="list-style-type: none">How Do They Do That? 11:30 am & 1:30 pm p7	30 <ul style="list-style-type: none">Victims of Flying Predators 11:30 am & 1:30 pm p7
Dec 1 <ul style="list-style-type: none">Run To The Far Side® p12	Thanksgiving Day					
The California Academy of Sciences is open 365 days of the year.						

The Story Behind the Star Projector

At the heart of Morrison Planetarium and its many star shows is a massive 13-foot star projector—capable of creating exquisitely accurate visions of a nighttime sky filled with 3,800 stars plus comets, meteors and other celestial phenomena as seen from any point on earth, at any moment in a span of 26,000 years.

This 50 year-old machine is all the more remarkable because it is essentially home-made—built by people who had no experience with star projectors.

“Even though it was a first-time effort, when the star projector was completed in 1952 it was the most advanced in the world and was better balanced and more precise

than many Swiss watches,” said Steve Craig who began working as a technician in the Planetarium in 1960 and today is its chairman. “That level of precision is pretty amazing, when you consider it weighs some 5000 pounds, stretches for 13 feet, includes 141 optical systems made up of 321 lenses and contains a total of 25,000 individual parts controlled by over 4 miles of wire.”

Prior to World War II, the Carl Zeiss company of Germany had created virtually every star projector in use. But, after the war their factory lay in ruins in the Russian zone of Germany. Determined to have a star projector, but unable to find anyone who could manufacture it, the late Robert C. Miller, Academy director at the time, decided that the Academy would build its own.

Years later he admitted that his decision was “rash...because I had no idea how we would go about it.”

To build its projector, the Academy turned to a paleontologist, Dr. G Dallas Hanna, who had an interest in optics. Using nothing more than a simple brochure about a Zeiss projector as his guide, Dr. Hanna designed a new projector from top to bottom.

One of the first tasks was choosing the stars that the projector would show. Starting with a catalogue of over 33,000 stars, the planetarium staff used a brand new IBM punch-card computer at the University of California at Berkeley to pick approximately 3,800 of the brightest. These stars would be projected onto the planetarium’s dome through custom lenses.

Previously, the lenses were made by drilling tiny holes into metal sheets; light projected through the holes became stars. However, the resulting images were too perfectly round to really look like stars. Academy staff tried a different process.

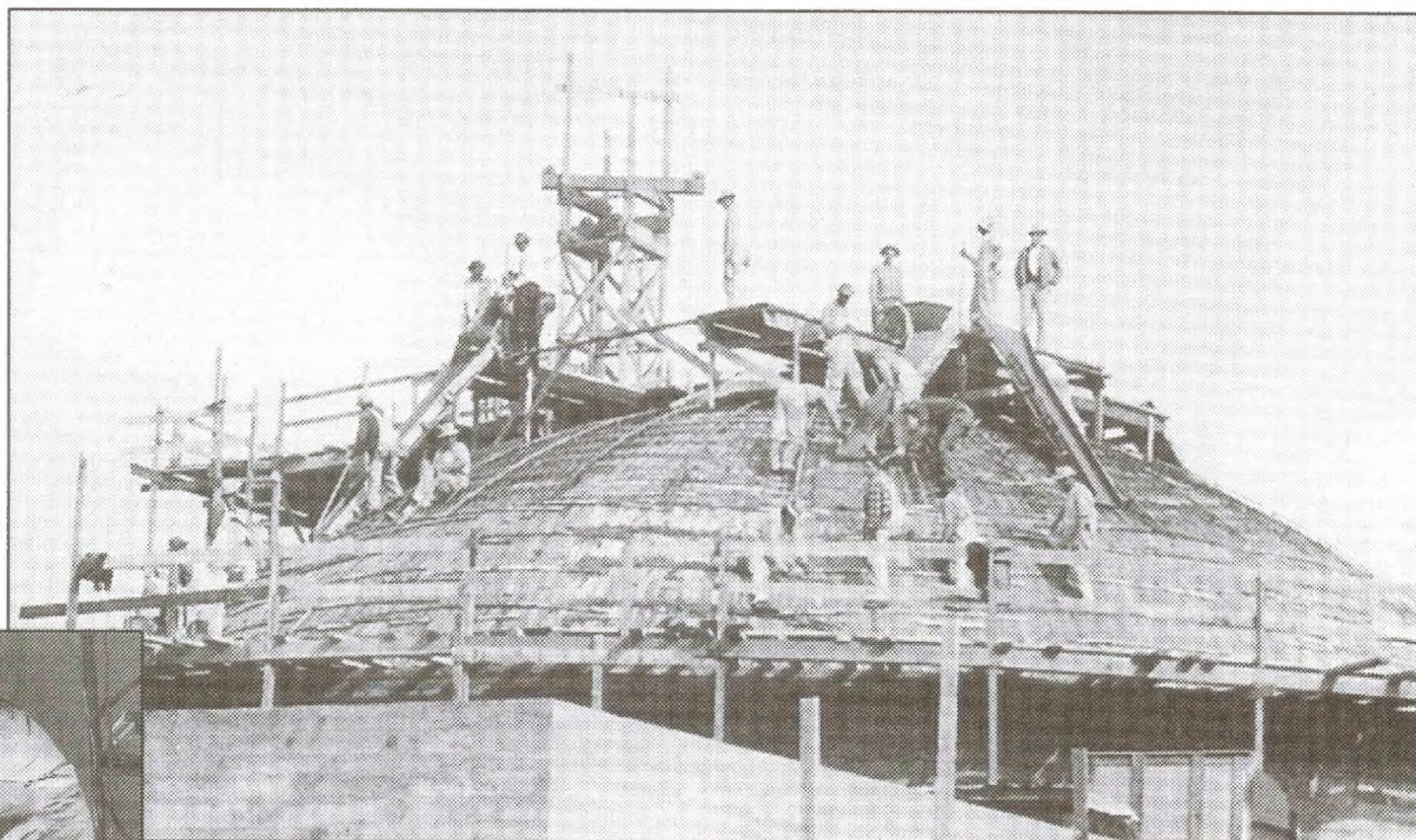


PHOTO: CAS SPECIAL COLLECTIONS

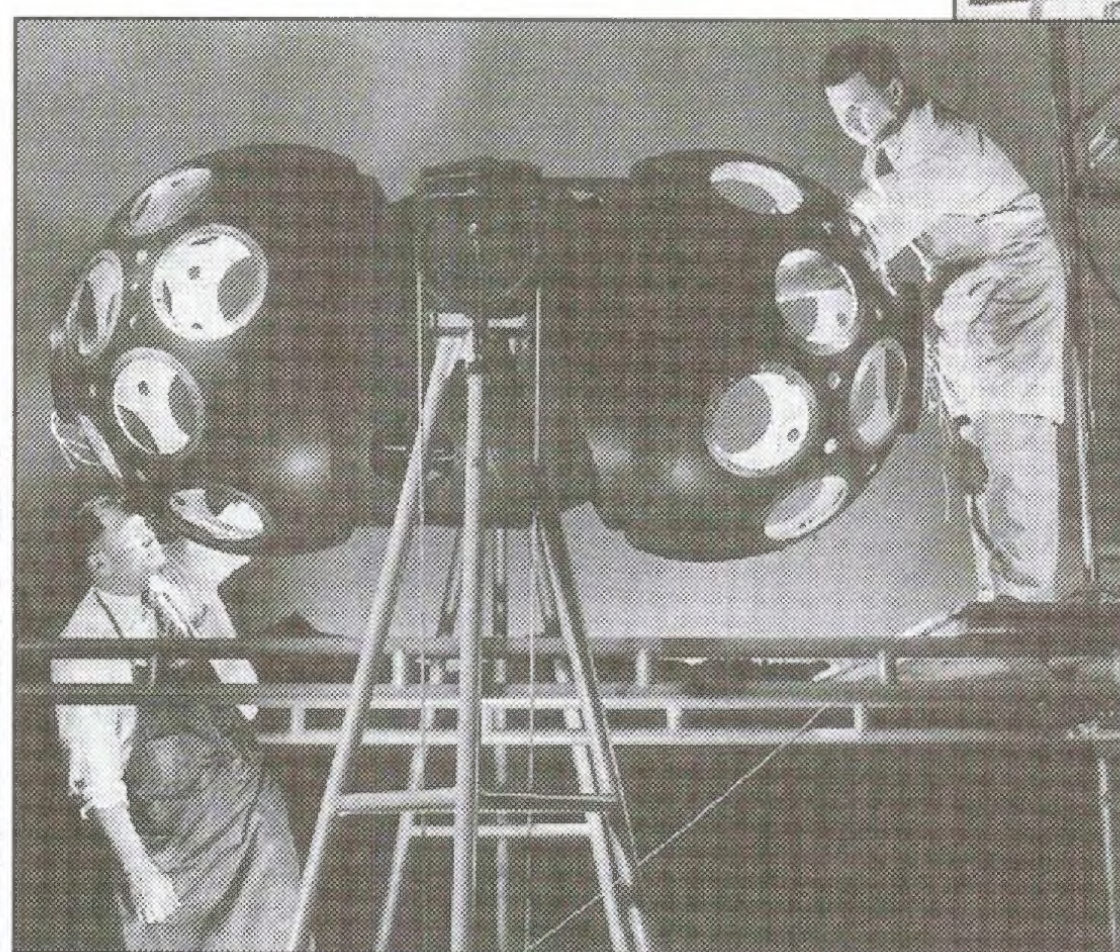


PHOTO: CAS SPECIAL COLLECTIONS

Above: Morrison Planetarium under construction. Left: Cleaning the new star projector.

Using microscopes, a single staffer hand-placed carborundum crystals as small as 1.5 one thousandths of an inch onto glass lenses and then coated the lenses with vaporized aluminum. When the crystals were brushed away, they left a series of tiny holes that closely correspond to the shape and position of the 3,800 chosen stars. Positioning the crystals alone took six months to complete.

After five years and \$140,000, the star projector gave its first show on the evening of November 6th, 1952 before an audience of VIPs. When it was over, the technicians who had worked so hard to build the projector were gratified to learn that a visiting director of a competing planetarium had declared the Academy’s star projector the best he had ever seen.

—Eliot Dobris, edobris@calacademy.org

Ask the Librarian

Q: Does a giraffe make vocal noises?

A: For a long time it was thought that giraffes did not make any kind of vocalization. However, scientists have now recorded a wide variety of sounds, including grunts, snorts, bellows, bleats, whistles, and a kind of moo. Although a variety of sounds have been heard, it is still rare for a giraffe to actually vocalize. For more information about giraffes, try *The Giraffe: Its Biology, Behavior and Ecology* (A. I. Dagg & J. Bristol Foster. Malabar, FL: Robert E. Krieger Publishing Company, 1982) available through the Academy Library.

Academy reference librarians are available to answer your questions, whether simple or complex. Call (415) 750-7102 or email library@calacademy.org.

50 Years of Sky Shows

Human footprints on the Moon, robotic rovers on Martian floodplains and planets around other stars all were unknown to us when Morrison Planetarium opened its doors on November 8, 1952. Celebrate our 50th Anniversary and 50 years of astronomy with *Stars Over San Francisco—Then and Now*. The new sky show runs every day at 2 pm, with a 3 pm show added on weekends. Prices are rolled back to the 1952 level: 74¢ for all shows through November 24, 2002.

Above Earth continues weekends at 1 pm until November 24. Find out *What's Up?* weekends at 12 pm, and take a tour of *The Sky Tonight* weekends at 4 pm. Shows are added for holidays and for the first Wednesday of each month. The Planetarium will be closed from Monday, November 25 through Thursday, November 28 to install *The Christmas Star*, which premieres Friday, November 29 at 2 pm.



PHOTO: CAS SPECIAL COLLECTIONS

Cleaning and adjusting the star projector in 1961: Steven B. Craig, Alvin Gundred, and O. Richard Norton.

i Members may exchange their planetarium vouchers for free tickets to Sky Shows at the Planetarium Ticket Booth in Gary Larson Hall, starting 30 minutes before each show. Additional tickets may be purchased 30 minutes before each show. \$2.50 for adults & \$1.25 for children 6–17 and senior citizens over 65. Shows are approximately 40 minutes in length. For more information call (415) 750-7141 or visit www.calacademy.org/planetarium. Schedules subject to change.

Planets and Satellites in Our Solar System: Special Focus on Io and Titan

Dr. Imke de Pater of the University of California at Berkeley, studies the outer solar system with data from the Galileo Spacecraft and Mauna Kea's 10-meter Keck telescope. Her beautiful and state-of-the-art images of our own solar system's giant gas planets give us a better understanding of these worlds, their origin, and subsequent evolution. Of particular interest are Jupiter's moon Io and Saturn's largest satellite, Titan. Come see the latest images of these mysterious satellites.

Tuesday, October 22, 7:30–9pm

A Heretic's Approach to Solar System Formation

The conventional view is that our Solar System formed in a quiet region of low mass star formation. **Dr. Alan Boss**, from the Carnegie Institution of Washington, advances a radical new suggestion: the solar system formed in a region of high mass star formation such as that found in the Orion Nebula. This scenario provides a novel explanation for the formation of Uranus and Neptune and predicts the production of organic molecules on comet surfaces and implies that planetary systems like ours may be commonplace. *Tuesday, November 12, 7:30–9pm*

i Lecture tickets are \$3 each and may be purchased using the form on page 14 or at the door. Please contact the Planetarium Office at 415-750-7127 or visit www.calacademy.org for more information.

Upcoming Dean Lectures:

Tuesday, December 10: Dr. Greg Laughlin "Explaining the Diversity of Extra-Solar Systems"

Tuesday, January 21: Dr. Jack Lissauer "Earthlike Planets: How They Form and How We Can Find Them"

Anniversary Celebration Schedule

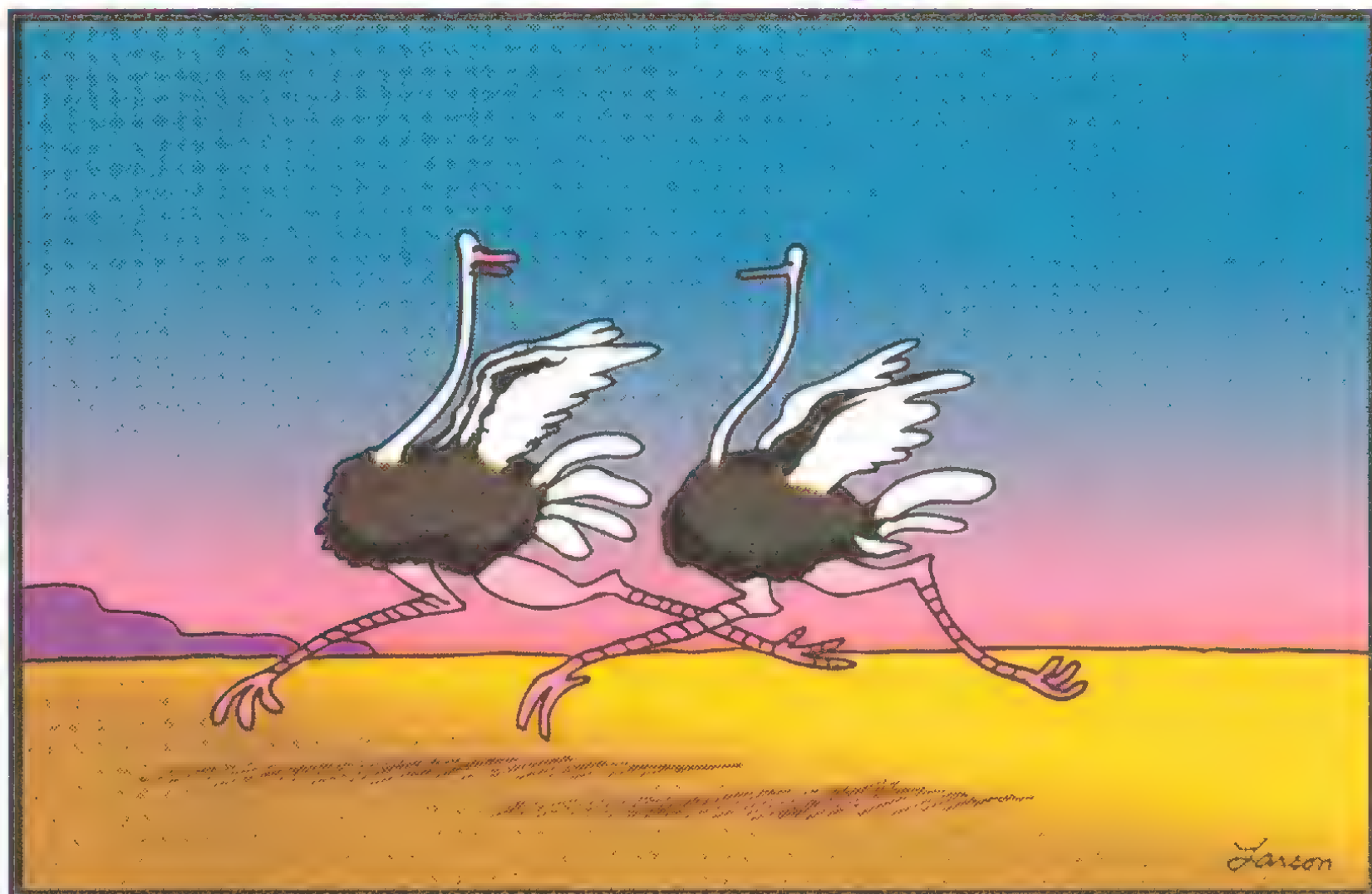
November 9, 2002

- 10 am–5 pm** Solar Observing—San Francisco
Amateur Astronomers – Front Steps
- 10:30 am** Celestial Story Time – Skulls
- 11 am–12 pm** Make Your Own Paper Cup Planetarium & Learn About Your Birthday Moon – Courtyard
- 12–4 pm** Sky Shows: *Stars Over San Francisco—Then and Now*, every hour – Morrison Planetarium
- 1:30 pm** Wish Morrison Planetarium Happy Birthday and enjoy cake – Cowell Hall
- 2–3 pm** Make your own Paper Cup Planetarium & Learn about your Birthday Moon
- 3:30 pm** Lecture: "Behind the Scenes in Morrison Planetarium" with Steve Craig – Auditorium

On Our Cover

Morrison Planetarium's star projector — hand built by Academy employees. It took five years to build and was completed in 1952. Photo by Susan Middleton.

CALIFORNIA ACADEMY OF SCIENCES RUN TO THE FAR SIDE XVIII



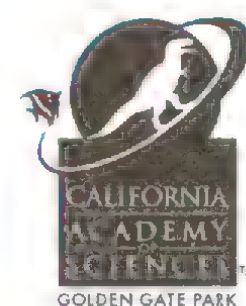
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"For crying out loud, Norm. Look at you ... I hope I don't look half as goony when I run."

5K RUN/WALK OR 10K RUN
8:30 AM • SUNDAY, DECEMBER 1, 2002
GOLDEN GATE PARK • SAN FRANCISCO

START

8:30 AM for both 5K Run/ Walk & 10K Run near the California Academy of Sciences in Golden Gate Park. Post-race party with live music and refreshments.

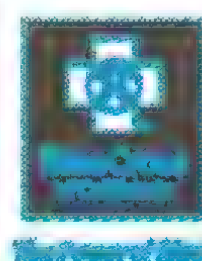


FREE ADMISSION

All registered participants are invited to visit the California Academy of Sciences any time between race day & January 31, 2003. Must have bib #.

THE T-SHIRT

Every registered runner or walker will receive a long-sleeve, white, 100% cotton t-shirt with this year's Gary Larson RUN TO THE FAR SIDE® cartoon.



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TO REGISTER

Complete and mail in entry form below or register online at www.sfgate.com/runtothefarside (Online registration charges a small service fee.)

SPECIAL THANKS

The California Academy of Sciences would like to thank FarWorks, Inc. and Gary Larson for the donation of the cartoon for this event. © 1984, 2002 FarWorks, Inc. All Rights Reserved. Used with permission. The Far Side® is a registered trademark of FarWorks, Inc.

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PRE-REGISTER by November 22, 2002 for \$25. (Members of the California Academy of Sciences are \$20.) Mail checks (payable to C.A.S.), signed, completed entry form and a self-addressed, stamped envelope to RUN TO THE FAR SIDE® c/o RhodyCo Productions - 1417 Irving Street, San Francisco, CA 94122 OR JOIN US RACE DAY FOR \$30. *Sorry, no refunds. One name per entry form.*



SEX <input type="checkbox"/> M <input type="checkbox"/> F	Age (on race day) <input type="text"/>	DATE OF BIRTH <input type="text"/> MONTH <input type="text"/> DAY <input type="text"/> YEAR <input type="text"/>	WHEELCHAIR <input type="checkbox"/>	For Official Use Only
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WAIVER: In consideration of your accepting this entry for RUN TO THE FAR SIDE® XVIII held on December 1, 2002, I, intending to be legally bound, do hereby for myself, my heirs, executors, and administrators waive and release any and all rights and claims for damages I may accrue against the California Academy of Sciences, the Recreation and Parks Department, City and County of San Francisco, RhodyCo Productions, Buzzword Productions, USA Track & Field, sponsors and volunteers, FarWorks, Inc., Gary Larson and their respective directors, officers, employees and agents, for any and all injuries that may be suffered by me at or en route to or from the event. I attest that I am physically fit and sufficiently trained for this competition. I will assume my own medical and emergency expenses in the event of an accident or other incapacity or injury resulting from or occurring from my participation. As part of the waiver I acknowledge that I have read and understand all of the above and, in consideration of this being an amateur event, I grant full permission to any and all organizations which obtain photographs, motion pictures, videotapes, recordings or any other records of this event to use them for any purpose whatsoever.

SIGNATURE _____ DATE: _____
ALL ENTRANTS MUST READ & SIGN WAIVER. (If entrant is under 18, parent or guardian must sign waiver.)

In Research...

The Biological Side of Latino Heritage

Academy scientist Dr. Healy Hamilton was in Colombia on a Fulbright Fellowship when she met Susana Caballero—a recent college graduate who was passionate about marine biology, but was unable to find further training in her home country. With her characteristic problem-solving approach, Dr. Hamilton took Caballero under her wing. After teaching her new student how to sequence DNA, Hamilton co-authored three papers with Caballero about marine mammal genetics, ensuring her acceptance into a graduate program in Australia. Since then, Caballero has trained half a dozen other Colombian students in genetic techniques. Once she finishes her dissertation, she plans to return to her home country to apply her training to the conservation of Colombia's spectacular diversity.

Hamilton is one of many Academy scientists involved in training Latin American students to study and preserve a part of their heritage that is sometimes overlooked—their native biodiversity. From the sea slugs of Costa Rica to the princess flowers of Brazil, these students and their Academy advisors are documenting new species and recording statistics that will support conservation efforts across Latin America.

Of the many new species these teams have recorded, nudibranchs (sea slugs) are among the most commonly collected. Yolanda Camacho-Garcia helped to collect 17 new species of these brightly colored, slow moving mollusks on her last trip to her native country. Working with Academy Provost and scientist Dr. Terry Gosliner, Camacho-Garcia is conducting the first comprehensive inventory of nudibranchs on Costa Rica's Pacific Coast—the type of research that helps scientists determine which areas are most in need of protection. Like Caballero, she now has access to the training and tools she needs to document and preserve her country's native species.

Through these students and others like them, the Academy is celebrating Latino heritage by doing something it is uniquely suited to do—studying and protecting biodiversity.

—Stephanie Greenman, sgreenman@calacademy.org



Biologist Susana Caballero of Bogota, Colombia has been working with Academy scientist Dr. Healy Hamilton on the molecular genetics of marine mammals, including these bottlenose dolphins from the Islas del Rosario aquarium near Cartagena, Colombia.

In Retrospect...

An Expedition to Mexico 50 Years Ago



Dr. George Lindsay with the giant barrel cactus *Ferocatus diguetii diguetii*.

SPRING 1952 – GEORGE LINDSAY DIRECTS THE SEFTON-STANFORD EXPEDITION TO THE GULF OF CALIFORNIA – “George Lindsay collected 152 numbers of cacti. He had studied the cacti of the Gulf on previous trips, but found several new records on this expedition, and a number of problems which had arisen during herbarium studies were cleared up. Most of the cacti were to be found in bloom, and many of the flowers were photographed and described for the first time.”

Dr. George E. Lindsay (1916-2002), the Academy's director from 1963-1982, made numerous trips to Baja California, Mexico in the course of his long botanical and administrative career. While his particular interest was the barrel cacti, he was a strong advocate for conservation in the whole region. In 1974, for example, he and Charles Lindbergh held a press conference in Mexico City to discuss the need for nature preserves. (Four years later, a presidential decree was issued protecting all of the Gulf Islands.)

George Lindsay was a graduate student at Stanford University at the time of the 1952 expedition, and his cactus specimens became part of Stanford's collections. In a curious twist of fate, during his long tenure as Academy Director, he oversaw the addition of Stanford's Dudley Herbarium (including his own specimens) to the Academy when Stanford went out of the natural history museum business.

As we celebrate Latino Heritage Month at the Academy, we remember Dr. Lindsay and his work to describe and preserve the biological heritage of one part of Latin America.

—Michele Welck, Academy Archivist, mwelck@calacademy.org

PHOTO: [N17,504] SPECIAL COLLECTIONS/CAS LIBRARY

Natural Treasures of Costa Rica

March 2–14, 2003

With Bob and Gail Drewes



PHOTO: FRANK AMEDA

Explore rainforest wildlife in Costa Rica and you may see this *Dendrobates pumilio* frog.

Join fellow Academy travelers on an unforgettable visit to Costa Rica, a land of outstanding beauty. During this trip of exploration and discovery, you will explore rainforest trails, visit the research center at Selva Verde, take a boat through the rainforest looking for monkeys, sloths, coatimundis, crocodiles, iguanas and exotic birds and butterflies. With more than a quarter of its land set aside in national and private parks, reserves and wildlife refuges, Costa Rica is renowned worldwide for its remarkable achievements in conservation. During visits to these parks and reserves, you will learn about past achievements as well as ongoing work being done to maintain and improve the natural environments. *Cost: \$4,590 land/air package from San Francisco (\$3,985 land-only tour rate), \$480 single supplement.*

Under Sail in the Caribbean

March 28–April 5, Aboard the *Sea Cloud*

2003 With John and Pam McCosker

In March 2003, the *Sea Cloud*—the most extraordinary sailing ship afloat—will set sail on a six night voyage to some of the most fascinating islands in the Caribbean. You will explore Antigua, Iles des Saintes, the volcanic peaks of St. Lucia, Grenada, Bequia and the lush rain forest of Dominica and you will learn how the Dutch, French and English influenced the distinctive cultures of the region.

Built in 1931, the *Sea Cloud* was originally commissioned by cereal heiress Marjorie Merriweather Post and E.F. Hutton. Built at a time when great attention was paid to exquisite details and fine craftsmanship, the *Sea Cloud* is decorated with original oil paintings, antique furniture, fireplaces, rich wood paneling and brass and bronze fixtures. As a working sailing ship (equipped with auxiliary diesel engines) the *Sea Cloud* only accommodates 64 passengers. *Cost: \$4,495–\$8,445 per person based on double occupancy, plus air. Singles are \$7,270–\$9,250.*

i For detailed itineraries and further information on these tours, please contact the Academy Travel Office at (800) 853-9372 or calacademy@hcaptravel.com.



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Leaving a Glittering Legacy

Helen von Ammon and the California Academy of Sciences are a good match. Like the Academy's scientists, she goes on expeditions, collects specimens, and publishes her research. Although her field of interest is not typically categorized as a science, she treats it as such. Ms. von Ammon is an artist and weaver who specializes in unusual fibers such as *qiviut*, the soft underdown of the muskox, which she spins into thread that will eventually find its way into one of her striking sweaters or scarves. She also weaves her observations and techniques into text—to date, she has published four books about the animals and fibers that she studies.

Given her eye for beauty, it is not surprising that Helen has a fondness for minerals. "I collected my first specimen, a piece of fluorite, on the way to Yosemite," she says, "and that's all it took—I was hooked." Although a few pieces still adorn her windowsills, she has given most of her impressive collection to the Academy's Invertebrate Zoology and Geology department. She continues to help the Academy's glittering collection grow, making gifts for the purchase of a new mineral each year. "The Academy's collection is so wonderful already," she explains. "I just want to be a part of that."

Ms. von Ammon has also included the Academy as a beneficiary in her estate, making her a member of the Eastwood Associates—a group formed to recognize and honor people whose gifts assure the future of the Academy. "I believe so strongly that the Academy is one of the best parts of this city—of this country, in fact," she says in explanation. "Everything I love is all together in one place!"

To learn more about the Eastwood Associates program, contact Nancy Baker, J.D. at (415) 750-7354 or via email at nbaker@calacademy.org.



PHOTO: COURTESY OF HELEN VON AMMON

Helen von Ammon wears one of her woven pieces of art. NaKoo, her angora rabbit, contributes fibers to many of her creations.

—Stephanie Greenman, sgreenman@calacademy.org

Bone Head Ball: A Blast

Thanks to the guests who made the Academy's 11th Annual Summer Gala, the Bone Head Ball, a hit on July 13. Peter and Dodie Sutro Crawford and Ken and Akiko Freeman chaired a busy committee who organized the black tie fête. Music was provided by Wonder Bread 5, Vivendo de Pão, the Harmonics Steel Band, and the Skel-e-tones. The event was catered by McCall and Associates. The Academy gratefully acknowledges all donors and sponsors, including Splendora, Absolut Mandarin, Wells Fargo, Pepsi, Scott and Jennifer Fearon, Jay Siegan Presents, Cranium, Banc of America Securities, Curve Bar & Restaurant, Australian Pearl Center, Kevin and Christine Chessen, Innovative Entertainment, National Travel, Greg and Darcy Wettersten, Eldos Grill & Brewery, and Match.com. Proceeds benefit education and research.



PHOTO: RAY SCOTTIE MORRIS

Left to right: Dodie Sutro Crawford, Ken Freeman, the Honorable Mayor Willie Brown, and Akiko Freeman

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May through June 2002: \$125 to \$999

Many thanks to the following new donors and to those who have increased their support of the Academy in the last few months.

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Check Out These Academy Exhibits

Skulls

Through Late 2003

Thousands of flesh-eating carrion beetles are busy feasting on dead heads. 860 sea lion skulls have been put into position for a display that runs the length of a professional basketball court. And one physical anthropologist is gazing 3.3 million years into the past at a single monkey.



A warthog skull –
Phacochoerus africanus.

All this and more is on display in **skulls**, an exhibit featuring over 1,700 diverse dead heads, representing animals that range from ancient squirrels to modern mice, and from hawks to humans.

PHOTOS: DAVID LIITTSCHWAGER ©2002

X-Ray Ichthyology

Ongoing

Are they works of art or part of a serious scientific study? Both. Prepare to look at fish in a whole new light. X-Ray Ichthyology captures 46 fish from the Academy's ichthyology collection on X-ray film.

Academy scientists originally prepared these X-rays for scientific purposes but quickly saw their artistic value and wanted to share them with the public. Blown up and backlit, these large-format photographs transform scaly swimmers ranging from piranhas to guitarfish into eerie, luminescent works of art.

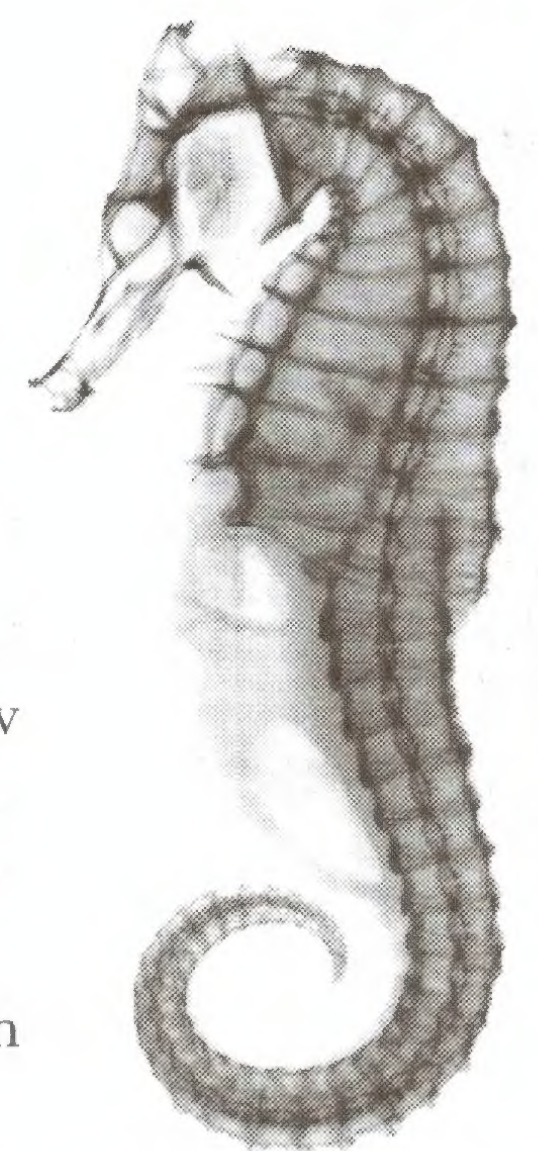


PHOTO: CAS COLLECTIONS

A sea horse – *Hippocampus aterrimus*.
A work of art, a scientific specimen, or both? You decide in X-Ray Ichthyology.

Powers of Ten

Through January 5, 2003

Come visit a place where the farthest reaches of the Universe and the familiar features of your own backyard are just a few steps—and a few zeros—apart. **Powers of Ten**, an exhibit based on the landmark film (shown in the exhibit) by Charles and Ray Eames, uses a series of photographs, videos and objects from the Academy's collections to explore 44 powers of ten, beginning with 10^{26} meters (the size of the known Universe) and ending at 10^{-18} meters (the size of the smallest known subatomic particles).

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